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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,182	11/26/2001	Jan Matthijs Jetten	BO 42503	9536
466	7590	02/23/2004	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			MCINTOSH III, TRAVISS C	
		ART UNIT		PAPER NUMBER
		1623		

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/914,182	JETTEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Traviss C McIntosh	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 November 2003.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 19-32 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 19-32 and 37-39 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)                    4) Interview Summary (PTO-413)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    Paper No(s)/Mail Date. \_\_\_\_\_  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_                    5) Notice of Informal Patent Application (PTO-152)  
                  6) Other: \_\_\_\_\_

**DETAILED ACTION**

The Amendment filed November 12, 2003 has been received, entered into the record, and carefully considered. The following information provided in the amendment affects the instant application by:

Claims 19, 25-32, and 38-39 have been amended.

Claims 1-18, and 33-36 have been canceled.

Remarks drawn to rejections of Office Action mailed June 11, 2003 include:

Claim objections: which have been overcome by applicant's amendments and have been withdrawn.

Obvious type Double Patenting rejection: which has been overcome by applicant's amendments and has been withdrawn.

112 2<sup>nd</sup> paragraph rejections: which have been overcome by applicant's amendments and have been withdrawn.

112 1<sup>st</sup> paragraph rejections: which have been maintained for reasons of record.

102(b) rejection: which has been overcome by applicant's amendments and has been withdrawn.

An action on the merits of claims 19-32 and 37-39 is contained herein below. The text of those sections of Title 35, US Code which are not included in this action can be found in a prior Office action.

***Double Patenting***

Claim 19 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 7 of copending Application No. 09/913,596 ('596). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application and copending application ('596) are both drawn to a process for oxidizing cellulose, which is a carbohydrate, using a nitroxyl compound in the presence of oxidative enzymes and oxidizing agents. The enzymes in both applications can be any enzyme capable of oxidation. The examiner notes that the copending application ('596) is directed to cellulose and the instant application is drawn to carbohydrates or steroids, however, it is noted that cellulose is a carbohydrate and thus the recitation of carbohydrates includes cellulose.

It would be obvious to one of ordinary skill in the art that the oxidation process claimed in the copending application's claim 7 ('596) and the instant application's claim 19 are substantially overlapping. The process of the instant invention must contain new and distinguishable measures over the copending application to be patentably distinct. It is noted (as set forth in the previous office actions) that the courts have held that it is permissible to use the specification in determining what is included in, and obvious from, the invention defined by the claim on which the rejection is based. This is true even where elements are drawn from the specification describing the claimed invention, which are not elements in the claim itself.

***Claim Rejections - 35 USC § 112***

The rejection of claims 19-30 and 37-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. A written description analysis involves three principle factors:

- 1) Field of the invention and predictability of the art,
- 2) Breadth of the claims, and
- 3) For each claimed species/genus, possession of the claimed invention at the time of the filing.

The breadth of the claims is such that the support in the specification is not adequate for the entire breadth of the claims. To provide adequate support for the breadth of the claims, applicant would have to provide sufficient evidence. An adequate representation of species requires that the species which are expressly described are indeed recognized in the art as representative of the entire genus. What constitutes "adequate representation" is an inverse function of the predictability in the art in question (should be supported by the state of the art). The written description requirement for a claimed genus, which in the instant application is "a process for oxidizing a carbohydrate or a steroid containing primary alcohol", may be satisfied through sufficient description of an adequate representation of species by functional characteristics sufficient to show applicant was in possession of the claimed genus.

As established by applicant's response filed May 13, 2003, page 2, when discussing method claims of the instant application in comparison to an identical method to oxidize cellulose, applicants state that "the claimed invention relates to oxidizing a non-cellulose primary alcohol... as the claims of the '596 application are all directed to cellulose, applicants believe the claimed invention cannot be obvious in view of the cited claims". That is, applicants arguments of record state that it would not be obvious to perform a methodological procedure which is identical in steps, and only differs in it's starting material, with cellulose and the group of non-cellulose primary alcohols. Applicants themselves state that the entire genus cannot be obvious in view of cellulose. How can they also believe that the entire genus can find support from the group consisting of starch and pullulan? Moreover, applicants have amended the claims to include cellulose, but have previously set forth that the methods involving cellulose are not within the purview of the skilled artisan. How can applicant's have had possession of the entire genus of any and all carbohydrates with primary alcohols, including cellulose, and any steroid with a primary alcohol when they earlier argue that the genus cannot be obvious in view of a single member of the genus? Applicants do not argue the methodological process steps, or reagents used are different, only the starting material is different. In view of these statements and upon further review of the instant application, the examiner believes that applicants have not described the claimed genus in such a way as to show they had possession of the entire claimed invention at the time of filing. Currently, the examiner believes applicants have acceptably shown a method of oxidizing starch and/or pullulan, which is not representative of the entire genus of "carbohydrates or steroid containing primary alcohols".

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As such, a skilled artisan would not recognize the current evidence of record as sufficient evidence. As such, there is not seen any data or correlative prior art evidence which supports applicant's claim that at the time of record they were in possession of the entire invention as asserted in the claims. Applicant's clearly articulating how a method which was shown to be effective only on pullulan and starch would be effective and obvious on all other carbohydrates and steroids containing a primary alcohol **and** would not be effective and obvious on cellulose would obviate the rejection instantly at hand.

Applicant's arguments filed November 12, 2003 have been fully considered but they are not persuasive. Applicants argue that they believe the present specification satisfies the written description requirement, and that the Examiner has the initial burden of presenting reasons or evidence as to why one skilled in the art would not recognize applicant's disclosure an adequate description of the invention defined by the claims, wherein applicants believe the Office action failed to show that the claimed invention is not supported by a sufficient written description. However, the examiner has established a showing that the instant invention lacks written description in the previous office action and the rejection is maintained as proper. Applicants have adequately described how to oxidize starch and pullulan with the claimed method, and starch and pullulan is not an adequate representation of carbohydrates and steroids. Starch is a polysaccharide made up of two principal polysaccharides, amylose and amylopectin, which are unbranched and branched chains of D-glucose joined by  $\alpha$ -1,4-glycosidic bonds and  $\alpha$ -1,6-glycosidic bonds respectively. Complete hydrolysis of amylose and amylopectin yields D-glucose. Pullulan has the chemical structure of a linear polymer wherein units of a maltotriose, a glucose trimer having an  $\alpha$ -1,4 bond, are repeatedly bonded to each other with an  $\alpha$ -1,6 bond.

These two compounds are not representative of all carbohydrates containing primary alcohols, and steroids, which do not even contain sugars and are structurally divergent (they actually fall in the lipid category).

The rejection of claims 31-32 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, is maintained for reasons of record. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

These claims are rejected for the same reasons as set forth supra, wherein applicants claim the broad genus of oxidized carbohydrate selected from the group consisting of polysaccharides of the alpha-glucan, mannan, galactan, fructan, chitin types, and carbohydrate glycosides. It is believed applicants only had possession of an oxidized starch and an oxidized pullulan at the time the invention was filed.

Applicant's arguments filed November 12, 2003 have been fully considered but they are not persuasive for the same reasons as set forth supra.

The rejection of claim 39 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is maintained for reasons of record. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 39 is directed to an oxidized carbohydrate of the beta-glucan type. Cellulose is a beta-glucan carbohydrate. As established by applicant's response filed May 13, 2003, page 2, when discussing obviousness of the method claimed in the instant application in comparison to an identical method to oxidize cellulose, applicant's state that "the claimed invention relates to oxidizing a non-cellulose primary alcohol... as the claims of the '596 application are all directed to cellulose, **applicants believe the claimed invention cannot be obvious in view of the cited claims**". Applicant's arguments clearly articulate that a process for oxidizing cellulose is indeed not obvious in light of oxidizing a non-cellulose primary alcohol with the same reagents and the same steps, therefor applicant could not have had possession of this broad genus of "saccharides of the beta-glucan type". It is believed applicants only had possession of oxidizing starch and pullulan, which is not representative of the broad genus as claimed.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

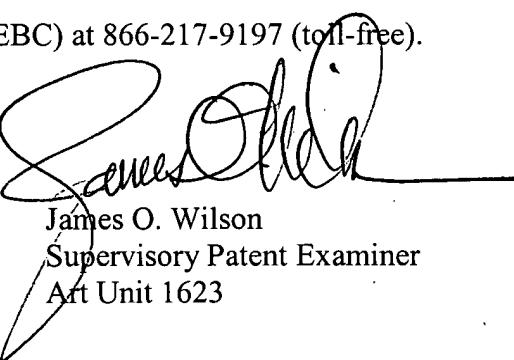
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Traviss C McIntosh whose telephone number is 571-272-0657. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Traviss C. McIntosh III  
February 5, 2004



James O. Wilson  
Supervisory Patent Examiner  
Art Unit 1623